

Specifications and Requirements page

LOCAD Specifications:



● **LOCAD-Portable Test System (PTS):**

Reader:

- 2 pounds
- 9.25" x 4.625" x 2.50"
- RS232 serial port for data input
- 90-240 V of power

Cartridges:

- Shelf life: 2 years
- 0.25" x 2.50" x 6.25"

Data:

- Data values given in endotoxin units (EU) or optical units (OU) per milliliter
- Quantitative data that gives an overall measure of cleanliness of a surface or liquid solution



● **Extended PTS:**

- 2.5 pounds

Cartridges:

- Shelf life: 6 months at 4°C (with printed microarrays)

Data:

- Data collected by onboard optics and provides a yes/no answer to the presence of a specific molecule
- Potential for semi-quantitative data by comparing to internal controls



● **Integrated Microfluidic-Microarray Monitor (IM3):**

- ~20 pounds

Microfluidic Chips:

- Shelf life: 6 months at 4°C (with printed microarrays)

Data:

- Data collected by onboard optics and provides semi-quantitative and quantitative data on the presence of specific microbes and molecules
- >300 compounds can be monitored simultaneously
- Additional data on protein/DNA concentration within a sample could be generated by read-outs at different stages of processing

Operational Requirements:

LOCAD-PTS:

- Internal heating element maintains thermal control of cartridge channels at $37^{\circ}\text{C} \pm 1^{\circ}\text{C}$ for optimal cartridge function
- Operational in a pressurized environment (varying from sea level to 30,000 feet atmospheric pressure levels)

Extended-PTS and IM3:

- Maintains the cartridge/chip at a temperature of $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- Operational in pressurized environment